INCH-POUND

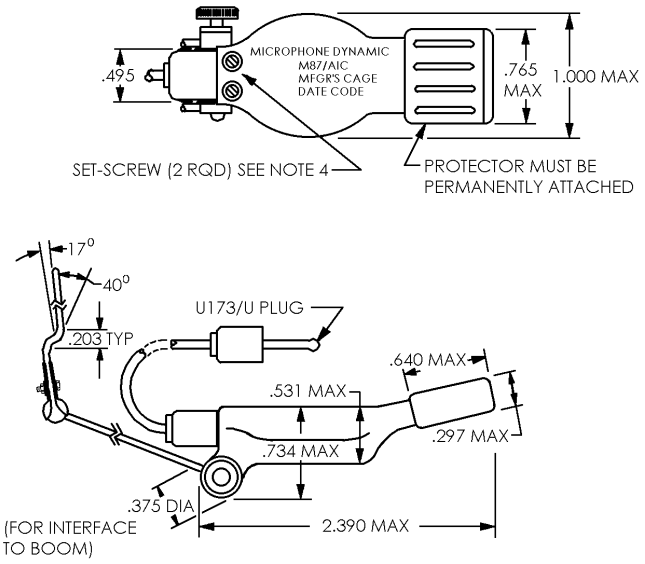
MIL-PRF-26542/2E
16 July 2002
SUPERSEDING
MIL-PRF-26542/2D
30 May 1997

PERFORMANCE SPECIFICATION SHEET

MICROPHONE AND MICROPHONE ASSEMBLIES,
M87/AIC, M26542/2-01, M26542/2-02, M26542/2-03, AND M26542/2-04

This specification is approved for use by all Departments
and Agencies of the Department of Defense.

The requirements for acquiring the product described herein shall consist of
this specification and MIL-PRF-26542.

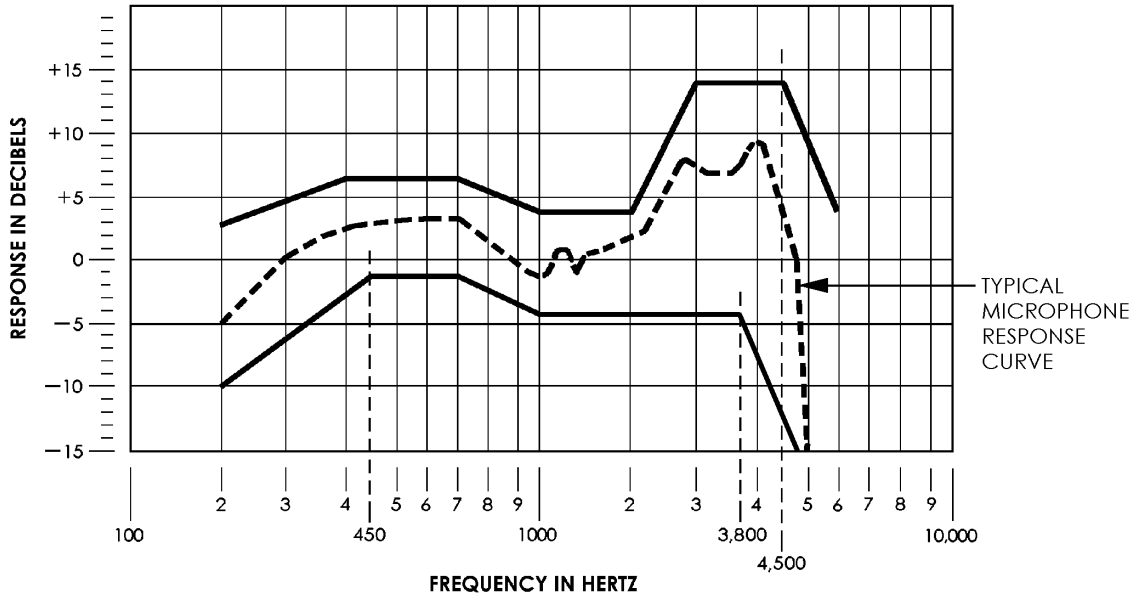


Inches	mm
.203	5.16
.297	7.54
.375	9.53
.495	12.57
.531	13.49
.640	16.26
.734	18.64
.765	19.43
1.000	25.40
2.390	60.71

NOTES:

1. Quantity and configuration of sound ports optional.
2. * The microphone element shall be marked with the same Part or Identifying Number (PIN) (i.e., M87/AIC). Placement on surface shown is optional. The combined microphone-cable assemblies PIN's (i.e., M26542/2-01, M26542/2-02, M26542/2-03, and M26542/2-04) shall appear on the packaging for that assembly, in accordance with MIL-STD-129.
3. Dimensions are in inches. Tolerance is ± 0.015 inch (0.38mm), unless otherwise specified.
4. Screws shall hold the element securely, shall be either slotted or Allen type, and shall not protrude above the surface of the element.
5. Angular requirements of boom shall be met to provide interface to headset, and for adjustability.

FIGURE 1. Microphone assembly.



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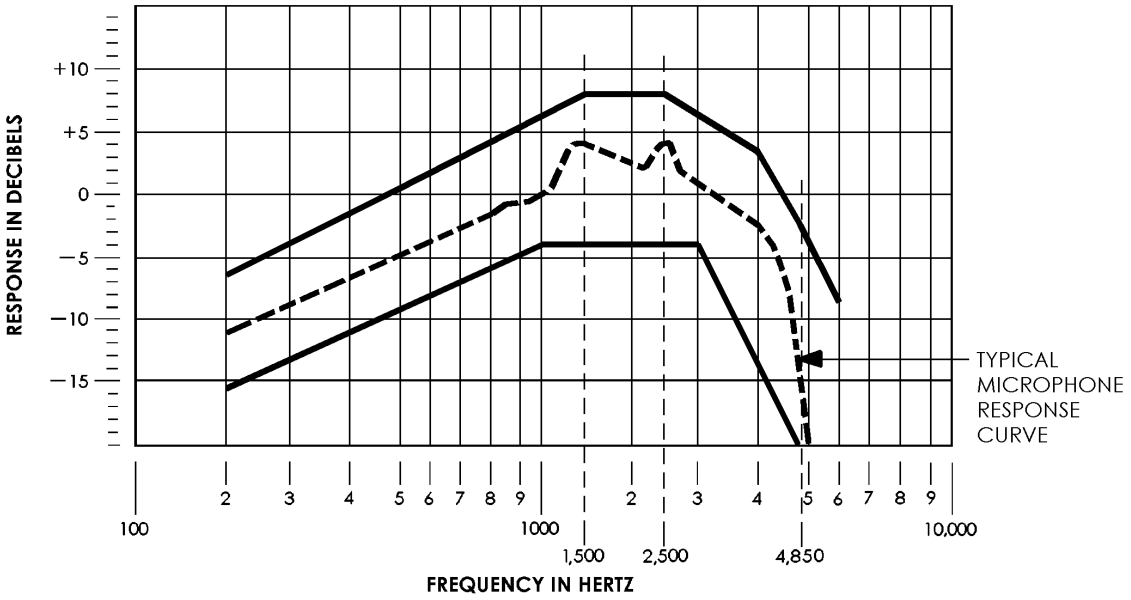
Frequency points	200 Hz	400 Hz	700 Hz	1,000 Hz	3,000 Hz	3,800 Hz	4,500 Hz	6,000 Hz
Upper limits (dB)	+2.50	+7.0	+7.0	+3.75	+13.75	+13.75	+13.75	+3.0
Lower limits (dB)	-10.0	-2.60 1/	-1.50	-4.25	-4.25	-4.25	-11.46 1/	---

1/ dB limits between key break point are calculated, using slope method.

FIGURE 2. Frequency response at sea level.



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Frequency points	200 Hz	700 Hz	1,000 Hz	1,500 Hz	2,500 Hz	4,000 Hz	4,850 Hz	6,000 Hz
Upper limits (dB)	-6.5	+2.3 1/	+5.6 1/	+8.0	+8.0	3.5	-2.5 1/	-9.0
Lower limits (dB)	-16.0	-7.0	-4.0	-4.0	-4.0	-13.6 1/	-20.0	---

1/ dB limits between key break point are calculated, using slope method.

FIGURE 3. Frequency response at 25,000 feet.

REQUIREMENTS:

Component parts:

Boom:

Dimensions: Dimensions of the boom shall be in accordance with USAF Drawing 67B1854, for interchangeability with the next-higher-assembly headset-microphone.

Color: Boom shall be the same color as the microphone element.

Finish: Shall be in accordance with MIL-PRF-26542 (see boom finish requirement).

Operation: Shall be in accordance with MIL-PRF-26542 (see boom operating force requirement).

Material: Shall be constructed from a high-strength, corrosion-resistant metal, meeting or exceeding the environmental and durability requirements of MIL-PRF-26542.

Cable assembly: Shall be in accordance with the specified part in order to provide interface to oxygen gear, for interchangeability, and for environmental performance. The microphone element shall provide a complete electrical and mechanical interface with the cable assembly. Cable assemblies per PIN are listed in table I.

Plug assembly: U-173/U, in accordance with USAF Drawing 57B12662, or electrically and mechanically compatible part.

Weight: 45 grams, maximum.

Performance:

Sensitivity at ground level: 34.0 dB – 40.98 dB (re 1 mV) or 50.4 µV – 112.0 µV with a Sound Pressure Level (SPL) input of 28 dynes/cm² at 1 kHz, when tested with the microphone sound port 0.187 inch ± 0.015 inch (4.75 mm ± 0.38mm) from, and coaxial with, the opening of the artificial voice.

Sensitivity at altitude: Shall be within ± 3 dB of initial ground level sensitivity, when tested at a simulated 25,000 feet.

Frequency response envelope at ground level and at altitude: Shall be as shown on figures 2 and 3, when tested with the microphone sound port 0.187 inch ± 0.015 inch (4.75 mm ± .38 mm) from, and coaxial with, the opening of the artificial voice. The response curves generated shall be on the same scale as shown in figures 2 and 3. The response curve shall not exceed the upper and lower limit curves of the stationary Frequency Response Envelope, within the frequency ranges identified in the appropriate chart (see figures 2 and 3).

Impedance: 4.0 ohms to 6.0 ohms.

Resistive load: 5 ohms.

Intended use: This is a noise-canceling dynamic microphone designed for use on a headband type headset at low altitudes or for use in a pressure type oxygen helmet, and at altitudes where the use of an oxygen helmet is required. It is not waterproof. The microphone is intended to provide communication under the noise conditions encountered in military aircraft.

The microphone assembly shall be tested in accordance with the tests listed in table II.

Marking: The microphone element shall be marked with the same PIN (i.e., M-87/AIC). The combined microphone-cable assemblies PIN (i.e., M26542/2-01, M26542/2-02, M26542/2-03, M26542/2-04) shall appear on the packaging for that assembly, in accordance with MIL-STD-129 and as shown in table I below.

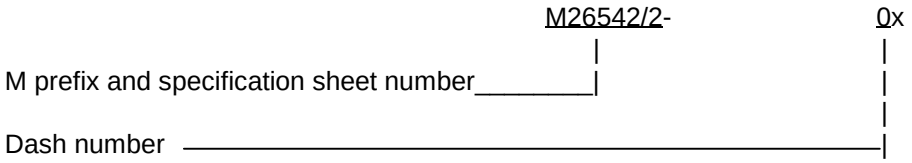

TABLE I. PIN designations.

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PIN	Characteristics
M87/AIC	Supplied with microphone element only
M26542/2-01	Supplied with microphone element, boom, and cable assembly M22442/36-3 (13.00 in).
M26542/2-02	Supplied with microphone element, boom, and cable assembly M22442/36-4 (16.25 in).
M26542/2-03	Supplied with microphone element, boom, and cable assembly M22442/36-6 (23.00 in).
M26542/2-04	Supplied with microphone element, boom, and cable assembly M22442/36-1 (6.25 in).

TABLE II. Parameter applicability.

Inspection	Qualification	Group "A"	Group "B"	Group "C"
Group I				
Visual and mechanical inspection	X	X		
Sensitivity at ground level	X	X		
Sensitivity at altitude	X			
Frequency response at ground level	X	X		
Frequency response at altitude	X			
Impedance	X	X		
Noise cancellation characteristic	N/A			
Effect of external magnetic field	X			
Stray magnetic field	X			
Linearity	X			
Talk-out	X	X		
Dielectric withstanding voltage	X			
Signal-to-noise	X		X	
Distortion	X		X	
Interchangeability	X		X	
Group II				
Thermal shock	X			X
Humidity	X			X
Drop	X			X
Pressure equalization	X			X
Explosive decompression	X			X
Salt fog	X			X
Group III				
Vibration	X			X
Bounce	X			X
Altitude	X			X
Moisture barrier seal	X			X
Immersion	N/A			
Group IV				
Fungus	X			
Group V				
Gun blast	N/A			
Boom finish	X		X	
Boom operating force	X		X	

The margins of this specification are marked with asterisks to indicate where changes from the previous issue were made. This was done as a convenience only and the Government assumes no liability whatsoever for any inaccuracies in these notations. Bidders and contractors are cautioned to evaluate the requirements of this document based on the entire content irrespective of the marginal notations and relationship to the last previous issue.

CONCLUDING MATERIAL

* Custodians:
Army - CR
Navy - EC
Air Force -11
DLA - CC

Review activities:
Army – AR, AT, AV, CR4
Navy – AS, OS
Air Force - 99

Preparing activity:
DLA - CC

(Project 5965-0351-002)